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<b>Document title:</b>	Ensuring AIS data availability following the NPR malfunction
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## Background

The technical solution implemented by regional AIS servers (RSs) ensures that national proxies (NPRs) installed at the participating States sites begin storing AIS information. (In a local database or the NPR disk cache, depending the solution applied) When the connection with the regional AIS server is down, and start sending both the real time and the buffered data when the connection is restored.

In replies to the questionnaire on the national AIS status (2019), the participating States indicated that they rely mainly on the NPR capabilities to buffer and retransmit the data automatically. However, this solution is not conclusive for cases when the NPR malfunctions or exceeds the data storage capacity.

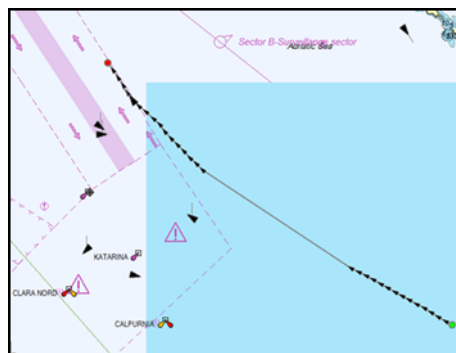


Fig.1: Missing ship positions (source: SEG)

Several measures to ensure the AIS availability have already been applied.

In 2019, EMSA and regional AIS servers, in cooperation with the Member States, carried out the data buffering by NPRs tests. The EMSA analysis showed that all NPRs installed at national systems apply buffering and retransmission.

The SSN Group (SSN/LRIT 5) agreed to implement a new AIS backup procedure. The procedure entails that, in case of a failure (incident) or planned intervention affecting the NPR connection to the RS for more than 12 hours (i.e. the NPR buffering timeout), or in case of a failure of the national AIS connection with NPR, or the NPR failure, the responsible national authority shall ensure that AIS data are buffered or stored by national AIS system, allowing their retransmission (either automatically or manually) after the recovering. If data cannot be retransmitted, the national authority shall provide the stored/buffered data via alternative

means (e.g. email, FTP etc.). The data retransmission/ delivery shall be agreed and coordinated with the RS or EMSA MSS (depending on the connection maintained).

A list of NPR capabilities to be supported mandatory was agreed at the 4th EMSA/Italy/Norway meeting on regional AIS servers (Oslo, 27 August 2019), such as: data buffering (for at least 12 hours); data filtering (per message type); the “old” data removing window (i.e. purging starts after 12 hours of storing); data automatic retransmission. The RSs hosting authorities agreed to assess possibility to implement both the NPR data storage solutions: the “time window” and the “storage capacity”. To reduce risks of loss of data during failures affecting AIS systems or their connections with regional AIS servers and/or the central SSN system, EMSA and the RSs hosting authorities agreed that Member States may provide their stored/buffered data automatically (in the background) or resent manually or submit via alternative means (e.g. email or FTP).

The solution should be agreed at the regional level.

### Data retransmission solution

When the Member State has restored their system to normal operations then they should extract AIS data for the ‘data-hole’ period from their system. The extracted data should be in stock standard NMEA format with an IEC TAG Block containing at minimum a timestamp in the ‘c’ parameter for every sentence. Example below:

```
\c:1554163385*56\!AIVDM,1,1,,B,33meWM?000Q@2dbWhkR007bN2C>3,0*7C
```

The extracted data should be placed in separate files daily files. Each file should be uniquely named. Each file should be placed in the “DataRestore” folder under the CSAP User Proxy installation folder.

The NPR will scan the “DataRestore” folder, process any new files and insert country origin information: Example below:

```
\i:<O>FOR</O>,c:1578992430*5C\!AIVDM,1,1,,A,1UQ>sh0014Kj0TkdMeLUET>>0000,0*59
```

### Action requested

The Meeting is invited to discuss and agree on the proposed solution.